

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE DRAWINGS

Fig. 8 has been amended to be labeled as "Prior Art" as required by the Examiner.

Submitted herewith are a corrected sheet of formal drawing which incorporates the amendment and an annotated sheet showing the change.

No new matter has been added, and it is respectfully requested that the Examiner's objection to the drawings be withdrawn.

THE CLAIMS

Claim 1 has been amended to clarify that the matching point where the output torque of the engine and the absorbing torque of the hydraulic pump coincide with each other is predetermined in accordance with work requirements.

In addition, claim 1 has been amended to recite that the engine controlling means controls the output of the engine such that the power output of the engine is constant or approximately constant in a predetermined engine speed range which includes an engine speed that corresponds to the matching point.

Still further, claims 1 and 2 have been amended to make some minor grammatical improvements and to correct some minor antecedent basis problems.

No new matter has been added, and it is respectfully requested that the amendments to the claims be approved and entered.

THE PRIOR ART REJECTION

Claims 1-4 were rejected under 35 USC 103 as being obvious over USP 4,773,369 ("Kobayashi et al") in view of JP 06-101651 ("Tomikawa et al"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

The present invention is directed to a hydraulic operation controlling unit which includes an engine, a hydraulic pump that is operated by this engine, a hydraulic actuator that is operated by pressurized oil that is discharged from this hydraulic pump, an engine controlling means for controlling an output of the engine, and a hydraulic pump absorbing torque controlling means for controlling an absorbing torque of the hydraulic pump.

More specifically, according to the present invention as recited in amended claim 1, a matching point where the output torque of the engine and the absorbing torque of the hydraulic pump coincide with each other is predetermined in accordance with work requirements. In addition, as recited in amended independent

claim 1, the engine controlling means controls the output of the engine such that the power output of the engine is constant or approximately constant in a predetermined range of the engine speed which includes an engine speed that corresponds to the matching point. As recited in amended independent claim 1, moreover, the hydraulic pump absorbing torque controlling means controls the absorbing torque of the hydraulic pump by increasing or reducing the absorbing torque of the hydraulic pump in accordance with an increase and a decrease in the engine speed. And as recited in amended independent claim 1, the absorbing torque of the hydraulic pump is controlled by the absorbing torque controlling means such that the output torque of the engine that corresponds to the matching point and the absorbing torque of the hydraulic pump are made to coincide with each other.

That is, according to the present invention as recited in amended independent claim 1, the output torque properties of the engine and absorbing torque properties of the hydraulic pump cross each other at the matching point. (See the disclosure in the specification at, for example page 25, lines 4-14.) With this control scheme, fluctuation in the output torque of the engine in response to the fluctuation in the engine speed becomes small, and therefore the engine can operate at and around the matching point with high stability.

It is respectfully submitted that the prior art references cited by the Examiner do not disclose all of the features of the present invention as recited in amended independent claim 1.

Specifically, it is respectfully submitted that Kobayashi et al and Tomikawa et al do not disclose or suggest engine controlling means for controlling output of an engine such that the power output of the engine is constant or approximately constant in a predetermined range of the engine speed which includes an engine speed corresponding a matching point at which the output torque of an engine and the absorbing torque of a hydraulic pump coincide, as according to the present invention as recited in amended independent claim 1. And in particular, it is respectfully submitted that column 6, line 66 to column 7, line 36 of Kobayashi et al cited by the Examiner does not disclose or suggest performing control over the output of the engine in a predetermined range of the engine speed including the engine speed that corresponds to the matching point.

Accordingly, it is respectfully submitted that the present invention as recited in amended independent claim 1, and claims 2-4 depending therefrom, clearly patentably distinguishes over Kobayashi et al and Tomikawa et al, taken singly or in combination, under 35 USC 103.

* * * * *

In view of the foregoing, entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

/Douglas Holtz/

Douglas Holtz
Reg. No. 33,902

Frishauf, Holtz, Goodman & Chick, P.C.
220 Fifth Avenue - 16th Floor
New York, New York 10001-7708
Tel. No. (212) 319-4900
Fax No. (212) 319-5101

DH:br:ak
encs.

FIG. 8

Prior Art

